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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,870	10/06/2003	Patrick Williams	5150-77600	3836

7590 11/09/2009

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ART UNIT	PAPER NUMBER
2192	

MAIL DATE	DELIVERY MODE
11/09/2009	PAPER

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/679,870
Filing Date: October 06, 2003
Appellant(s): WILLIAMS ET AL.

Jeffrey C. Hood
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on August 26, 2009 appealing from the Office action mailed on February 25, 2009.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments after Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct. No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to Be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,026,233	SHULMAN et al.	2-2000
5,784,275	SOJOODI et al.	7-1998
6,370,569	AUSTIN	4-2002
2003/0058280	MOLINARI et al.	3-2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

- Claims 1, 9, 11, 13, 20-24, 26, 27, 31 and 32 stand finally rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,026,233 to Shulman et al. ("Shulman") in view of U.S. Patent No. 5,784,275 to Sojoodi et al. ("Sojoodi").

Claim 1

Shulman teaches a computer-readable memory medium storing program instructions (see, for example, FIG. 1 and the abstract) executable to:

in source code of a software program, display a first function call written in a text-based programming language that can be compiled into executable code, wherein the first function call takes a first parameter (see, for example, FIG. 7 and column 11, lines 51-63, which shows displaying in such source code a first function call 732 that takes a first parameter 742);

Shulman further teaches that the program instructions are executable to programmatically determine one or more valid parameter values for the first parameter of the first function call (see, for example, column 11, lines 38-50, which shows one or more valid parameter values for

the first parameter 742, and column 17, lines 27-38, which shows programmatically determining such values), but does not explicitly describe invoking software for a measurement device in order to determine one or more hardware resources of the measurement device, wherein each of the one or more valid parameter values represents a respective hardware resource of the one or more hardware resources.

Nonetheless, in an analogous art, Sojoodi teaches a programming environment for creating a software program to control an instrument or measurement device (see, for example, the abstract). The instrument or measurement device comprises one or more hardware resources (see, for example, column 4, lines 25-40). Sojoodi further teaches invoking software for the measurement device in order to determine one or more hardware resources (see, for example, column 7, lines 3-17). One or more valid parameter values represent the hardware resources in function calls (see, for example, column 5, lines 23-51).

A person of ordinary skill in the art could, with predictable results, apply the teachings of Shulman to a programming environment such as described in Sojoodi, such that the source code described in Shulman represents a software program for controlling an instrument or measurement device. A person of ordinary skill in the art would have been prompted to enhance the programming environment of Sojoodi with the teachings of Shulman. Thus, it would have been obvious to those of ordinary skill in the art at the time the invention was made to implement the teachings of Shulman so as to invoke software for a measurement device in order to determine one or more hardware resources of the measurement device, wherein each of the one or more valid parameter values represents a respective hardware resource of the one or more hardware resources.

Shulman in view of Sojoodi further teaches or suggests that the program instructions are executable to:

position a cursor on the first function call displayed in the source code in response to user input (see, for example, FIG. 7 and column 11, lines 51-63, which shows positioning a cursor 733 on the first function call 732 in the source code);

in response to user input requesting to select a parameter value, determine that the cursor is positioned on the first function call and display a graphical user interface for selecting a parameter value for the first parameter of the first function call, wherein the graphical user interface visually indicates the one or more valid parameter values (see, for example, FIG. 8 and column 12, lines 17-30, which shows displaying a graphical user interface 850 for selecting a valid parameter value in response to such user input, and column 13, lines 14-18, which further shows such user input);

receive user input to the graphical user interface to select a first parameter value from the one or more valid parameter values, wherein the first parameter value represents a first hardware resource of the measurement device (see, for example, FIG. 9 and column 12, lines 33-40, which shows receiving user input to select a parameter value 910); and

automatically modify the first function call displayed in the source code of the software program by including the first parameter value in the first function call in response to the user input selecting the first parameter value, wherein automatically including the first parameter value in the first function call aids a user in modifying the first function call to reference the first hardware resource of the measurement device (see, for example, FIG. 9 and column 12, lines 33-

40, which shows automatically modifying the first function call 732 to include the parameter value 910).

Claim 9

The rejection of claim 1 is incorporated, and Shulman in view of Sojoodi further teaches or suggests,

wherein the measurement device comprises a GPIB device;

wherein said determining the one or more hardware resources of the measurement device comprises determining one or more hardware resources of the GPIB device;

wherein the first parameter value represents a first hardware resource of the GPIB device;

wherein said automatically including the first parameter value in the first function call comprises automatically configuring the first function call with a reference to the first hardware resource of the GPIB device.

Specifically, Sojoodi describes that the instrument or measurement device comprises a GPIB device (see, for example, column 4, lines 25-40).

Claim 11

The rejection of claim 1 is incorporated, and Shulman in view of Sojoodi further teaches or suggests,

wherein the measurement device comprises a DAQ device;

wherein said determining the one or more hardware resources of the measurement device comprises determining one or more hardware resources of the DAQ device;

wherein the first parameter value represents a first hardware resource of the DAQ device;

wherein said automatically including the first parameter value in the first function call comprises automatically configuring the first function call with a reference to the first hardware resource of the DAQ device.

Specifically, Sojoodi describes that the instrument or measurement device comprises a DAQ device (see, for example, column 4, lines 25-40).

Claim 13

The rejection of claim 1 is incorporated, and Shulman in view of Sojoodi further teaches or suggests that the program instructions are further executable to:

receive user input specifying filtering criteria for the parameter values (see, for example, column 11, lines 6-30, which shows specifying filtering criteria for the parameter values);

wherein the graphical user interface visually indicates only a subset of the valid parameter values, wherein the subset is determined based on the specified filtering criteria (see, for example, column 11, lines 6-30, which shows indicating only a subset of the valid parameter values based on the filtering criteria).

Claim 20

The rejection of claim 1 is incorporated, and Shulman in view of Sojoodi further teaches or suggests,

wherein the source code is displayed in a first window (see, for example, FIG. 8, which shows that the source code is displayed in a first window 700);

wherein said displaying the graphical user interface comprises displaying the graphical user interface in a separate window apart from the first window (see, for example, FIG. 8, which shows that the graphical user interface 850 is displayed in a separate window).

Claim 21

The rejection of claim 1 is incorporated, and Shulman in view of Sojoodi further teaches or suggests,

wherein the source code is displayed in a first portion of a first window (see, for example, FIG. 8, which shows that the source code is displayed in a first portion of a first window 700);

wherein said displaying the graphical user interface comprises displaying the graphical user interface in a second portion of the first window (see, for example, FIG. 8, which shows that the graphical user interface 850 is displayed in a second portion of the first window).

Claim 22

The rejection of claim 1 is incorporated, and Shulman in view of Sojoodi further teaches or suggests,

wherein the graphical user interface displays the one or more valid parameter values as a list (see, for example, column 7, lines 22-37, which shows that the valid parameter values are displayed as a list);

wherein said receiving user input to the graphical user interface to select the first parameter value comprises receiving user input to the graphical user interface to select the first parameter value from the list (see, for example, column 7, lines 22-37, which shows that the parameter value is selected from the list).

Claim 23

The rejection of claim 1 is incorporated, and Shulman in view of Sojoodi further teaches or suggests,

wherein said programmatically determining the one or more valid parameter values includes programmatically determining one or more property values;

wherein said receiving user input to the graphical user interface to select the first parameter value comprises receiving user input to the graphical user interface to select a first property value;

wherein the first property value is automatically included in the first function call in response to the user input selecting the first property value.

Specifically, Shulman describes that the parameter values correspond to property values (see, for example, column 11, lines 38-50), and Sojoodi likewise describes that the parameter values correspond to attribute or property values (see, for example, column 5, lines 23-51).

Claim 24

The claim is directed a computer-readable memory medium that is analogous to the computer-readable memory medium recited in claim 1 (see the rejection of claim 1 above). Note that a method call such as recited in claim 24 is analogous to a function call such as recited in claim 1.

Claim 26

The claim is directed to a system that corresponds to the computer-readable memory medium recited in claim 1 (see the rejection of claim 1 above). Note that Shulman teaches one or more processors and a display device such as recited in claim 26 (see, for example, FIG. 1).

Claim 27

The claim is directed to a computer-implemented method that corresponds to the computer-readable memory medium recited in claim 1 (see the rejection of claim 1 above).

Claim 31

Shulman teaches a computer-readable memory medium storing program instructions (see, for example, FIG. 1 and the abstract).

Shulman further teaches that the program instructions are executable to display source code of a program, wherein the source code includes a first function call that takes a first input parameter (see, for example, FIG. 7 and column 11, lines 51-63, which shows displaying in source code a first function call 732 that takes a first input parameter 742), but does not explicitly describe that the program instructions are executable to:

display a block diagram of a graphical program, wherein the block diagram includes a plurality of interconnected nodes visually indicating functionality of the graphical program, wherein the block diagram can be compiled into executable code, wherein the plurality of interconnected nodes includes a first node that takes a first input parameter.

Likewise, Shulman further teaches that the program instructions are executable to programmatically determine one or more valid parameter values for the first input parameter of the first function call (see, for example, column 11, lines 38-50, which shows one or more valid

parameter values for the first parameter 742, and column 17, lines 27-38, which shows programmatically determining such values), but does not explicitly describe invoking software for a measurement device in order to determine one or more hardware resources of the measurement device, wherein each of the one or more valid parameter values represents a respective hardware resource of the one or more hardware resources.

Nonetheless, in an analogous art, Sojoodi teaches a programming environment for creating a graphical program including a block diagram to control an instrument or measurement device (see, for example, FIG. 6 and the abstract). The instrument or measurement device comprises one or more hardware resources (see, for example, column 4, lines 25-40). The block diagram includes interconnected nodes that take input parameters and represent the functionality of the graphical program (see, for example, column 5, lines 11-42). Sojoodi further teaches invoking software for the measurement device in order to determine one or more hardware resources (see, for example, column 7, lines 3-17). One or more valid parameter values represent the hardware resources in function calls (see, for example, column 5, lines 23-51).

A person of ordinary skill in the art could, with predictable results, apply the teachings of Shulman to a programming environment such as described in Sojoodi, such that the source code described in Shulman represents a graphical program for controlling an instrument or measurement device. A person of ordinary skill in the art would have been prompted to enhance the programming environment of Sojoodi with the teachings of Shulman. Thus, it would have been obvious to those of ordinary skill in the art at the time the invention was made to implement the teachings of Shulman so as to display a block diagram of a graphical program, wherein the block diagram includes a plurality of interconnected nodes visually indicating functionality of

the graphical program, wherein the block diagram can be compiled into executable code, wherein the plurality of interconnected nodes includes a first node that takes a first input parameter. Likewise, it would have been obvious to those of ordinary skill in the art at the time the invention was made to implement the teachings of Shulman so as to invoke software for a measurement device in order to determine one or more hardware resources of the measurement device, wherein each of the one or more valid parameter values represents a respective hardware resource of the one or more hardware resources.

Shulman in view of Sojoodi further teaches or suggests that the program instructions are executable to:

display a graphical user interface for selecting a parameter value for the first input parameter of the first node, wherein the graphical user interface for selecting the parameter value visually indicates the one or more valid parameter values (see, for example, FIG. 8 and column 12, lines 17-30, which shows displaying a graphical user interface 850 for selecting a valid parameter value);

receive user input to the graphical user interface to select a first parameter value from the one or more valid parameter values, wherein the first parameter value represents a first hardware resource of the measurement device (see, for example, FIG. 9 and column 12, lines 33-40, which shows receiving user input to select a parameter value 910); and

automatically configure the first node with the first parameter value in response to the user input selecting the first parameter value, wherein automatically configuring the first node with the first parameter value comprises automatically updating the displayed block diagram to visually indicate that the first node receives the first parameter value as input (see, for example,

FIG. 9 and column 12, lines 33-40, which shows automatically configuring the first function call 732 to include the parameter value 910).

Claim 32

The rejection of claim 31 is incorporated, and Shulman in view of Sojoodi further teaches or suggests,

wherein automatically configuring the first node with the first parameter value comprises automatically wiring the first parameter value to an input terminal of the first node;

wherein updating the block diagram comprises displaying a wire connecting the first parameter value to the input terminal of the first node.

Specifically, Sojoodi describes that configuring the block diagram comprises wiring a parameter value to an input terminal of a node and displaying the wire (see, for example, column 5, lines 52-67).

- Claim 12 stands finally rejected under 35 U.S.C. § 103(a) as unpatentable over Shulman in view of Sojoodi, as applied to claim 1 above, and further in view of U.S. Patent No. 6,370,569 to Austin ("Austin").

Claim 12

The rejection of claim 1 is incorporated. Sojoodi describes that the instrument or measurement device comprises an Ethernet device (see, for example, column 4, lines 25-40), but does not explicitly describe,

wherein said determining the one or more valid parameter values comprises determining one or more universal resource locators (URLs) that represent the one or more hardware resources of the measurement device;

wherein the first parameter value comprises a first URL of the one or more URLs;

wherein said automatically including the first parameter value in the first function call comprises automatically configuring the first function call with a reference to the first URL.

Nonetheless, in an analogous art, Austin teaches parameter values comprising uniform resource locators (URLs) that represent resources (see, for example, column 2, lines 30-51). The teachings of Austin enable a program to access data from resources located on a network (see, for example, column 2, lines 20-29).

Therefore, it would have been obvious to those of ordinary skill in the art at the time the invention was made to implement the teachings of Shulman and Sojoodi such that said determining the one or more valid parameter values comprises determining one or more universal resource locators (URLs) that represent the one or more hardware resources of the measurement device, such that the first parameter value comprises a first URL of the one or more URLs, and such that said automatically including the first parameter value in the first function call comprises automatically configuring the first function call with a reference to the first URL. As Austin suggests, such an implementation would enable programs created in the programming environment of Shulman and Sojoodi to access data from resources located on a network.

- Claims 33 and 34 stand finally rejected under 35 U.S.C. § 103(a) as unpatentable over Shulman in view of Sojoodi, as applied to claim 1 above, and further in view of U.S. Pub. No. 2003/0058280 to Molinari et al. ("Molinari").

Claim 33

The rejection of claim 1 is incorporated. Shulman in view of Sojoodi does not explicitly describe,

wherein the measurement device includes a plurality of channels;

wherein invoking the software for the measurement device in order to determine the one or more hardware resources of the measurement device comprises invoking the software for the measurement device in order to determine the plurality of channels.

Nonetheless, in an analogous art, Molinari teaches a measurement device that includes a plurality of channels (see, for example, paragraph [0120]). Molinari further teaches invoking software for the measurement device in order to determine the plurality of channels (see, for example, paragraph [0150]), thus allowing the user to identify and choose from all the channels that the measurement device provides (see, for example, paragraph [0151]).

Therefore, it would have been obvious to those of ordinary skill in the art at the time the invention was made to implement the teachings of Shulman and Sojoodi such that the measurement device includes a plurality of channels and that invoking the software for the measurement device in order to determine the one or more hardware resources of the measurement device comprises invoking the software for the measurement device in order to determine the plurality of channels. As Molinari suggests, such an implementation would allow the user to identify and choose from all the channels that the measurement device provides.

Claim 34

The rejection of claim 1 is incorporated. Shulman in view of Sojoodi does not explicitly describe that said invoking the software for the measurement device in order to determine the one or more hardware resources of the measurement device is performed in response to the user input requesting to select a parameter value.

Nonetheless, in an analogous art, Molinari teaches invoking software for a measurement device in order to determine one or more hardware resources of the measurement device (see, for example, paragraph [0150]). The invoking is performed in response to user input requesting to select a data source (see, for example, paragraph [0149]).

A person of ordinary skill in the art could, with predictable results, implement the teachings of Shulman and Sojoodi such that said invoking the software for the measurement device in order to determine the one or more hardware resources of the measurement device is performed in response to the user input requesting to select a parameter value, such as suggested in Molinari. A person of ordinary skill in the art would have been prompted, for example, to ensure that the valid parameter values are up to date when the user requests to select a parameter. Thus, the claimed subject matter would have been obvious to those of ordinary skill in the art at the time the invention was made.

(10) Response to Arguments

Independent Claims 1, 24, 26 and 27

Appellant contends that in Sojoodi, "the VISA classes determined by querying the object manager are not hardware resources of a device" (brief, page 9). Appellant contends that the VISA classes "are object-oriented software classes" and states that a software class "is not at all the same thing" as a hardware resource (brief, page 10). Thus, Appellant concludes that the examiner's interpretation of a VISA class as a hardware resource is erroneous (brief, page 10).

However, the examiner does not agree with the premise of Appellant's argument. The examiner's interpretation is not that a VISA class is a hardware resource *per se*, but rather that the VISA classes described in Sojoodi represent hardware resources. Appellant is correct that the VISA architecture provides an object-oriented programming environment for controlling instrumentation systems, as Sojoodi describes (see, e.g., column 3, line 64 to column 4, line 6). Likewise, Appellant is correct that a class is not the same as hardware. Nonetheless, the instrumentation systems described in Sojoodi are measurement devices comprising hardware resources (see, e.g., FIG. 1). The programming environment is for controlling these hardware resources, and the VISA classes are representations of the hardware resources in the programming environment. Sojoodi describes:

> The programming environment comprises an object manager and a program editor for editing the diagram. The invention comprises a method for creating a program for controlling the instrument which is independent of an interface type of the instrument. This method comprises the program editor displaying on the display screen an icon representing the instrument, the program editor querying the object manager for a list of classes of the instrument, where the classes correspond to possible VISA interface types of the instrument, the object manager parsing a class definition file containing the list of classes, the object manager providing the list of classes to the program editor, the program editor displaying

> on the display screen the list of classes of the instrument, and the user choosing a class from the list to associate with the instrument. (Column 7, lines 3-17; emphasis added.)

Sojoodi further describes, “A given VISA session has a particular <u>class</u> corresponding to the <u>hardware I/O interface type</u> of the instrument being controlled” (column 4, lines 35-38; emphasis added). A hardware I/O interface is a hardware resource. Thus, the “list of classes of the instrument” described in Sojoodi is a representation of one or more hardware resources of the instrument. The examiner respectfully submits that the program editor querying the object manager for a list of such classes would have suggested “invoking software for a measurement device in order to determine one or more hardware resources of the measurement device” to those of ordinary skill in the art.

Appellant further contends that under the examiner’s interpretation, “the first function call [would be] modified by including a first parameter value representing a particular VISA class in the first function call” and that “the particular VISA class would be passed as a parameter to the first function call” (brief, page 11). Appellant argues that “it is not at all clear why one would want to pass a class as a parameter into a function call (or even whether this is syntactically allowable)” (brief, page 11).

However, the examiner respectfully points out that combining the <u>teachings</u> of references does not involve an ability to combine the particular structures of the references. See *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973). Instead, the test for obviousness is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). The examiner submits

that the combined teachings of Shulman and Sojoodi would have suggested the claimed subject matter to those of ordinary skill in the art.

Specifically, Shulman teaches a tool that is comparable to Appellant's parameter assistant (see, e.g., the abstract). As set forth in the Office action, Shulman teaches "[receiving] user input to the graphical user interface to select a first parameter value from the one or more valid parameter values" and "automatically [modifying] the first function call displayed in the source code of the software program by including the first parameter value in the first function call in response to the user input selecting the first parameter value, wherein automatically including the first parameter value in the first function call aids a user in modifying the first function call" such as recited in the claim (see, e.g., FIG. 9, column 7, lines 22-37 and column 12, lines 33-40).

The difference is merely that Shulman does not describe that "the first parameter value represents a first hardware resource of the measurement device" and consequently that "the first function call [references] the first hardware resource of the measurement device." In other words, Appellant's invention, as claimed, is directed to an embodiment of the tool described in Shulman wherein the "first function call" references a hardware resource of a measurement device. A person of ordinary skill in the art could apply the teachings of Shulman to such a function call with predictable results.

Indeed, the teachings of Sojoodi are evidence that function calls referencing hardware resources of measurement devices were known to those of ordinary skill in the art at the time of the invention. For example, Sojoodi describes a function call for writing data to an instrument (see, e.g., column 15, lines 27-47) and a function call for reading data from the instrument (see, e.g., column 15, line 62 to column 16, line 11). The function calls include parameter values that

represent the hardware resources of the instrument. As Sojoodi describes, the VISA classes noted above encapsulate these functions to control the instrument or measurement device from the programming environment (see, e.g., column 12, lines 43-64).

Thus, given that Shulman teaches modifying a function call to include a selected, valid parameter value, and given that Sojoodi teaches a parameter value that represents a hardware resource of a measurement device, the combined teachings of Shulman and Sojoodi would have suggested the claimed subject matter to those of ordinary skill in the art.

Moreover, Sojoodi describes a tool that, like the teachings of Shulman, is also comparable to Appellant's parameter assistant:

> FIG. 28 shows a list of attributes for the VISA Instr class in the Select Item pull-right menu. The Select Item pull-right menu <u>only displays attributes for the user to select which are valid for the current VISA class</u> of the attribute node. That is, the Select Item pull-right menu does not display attributes which are not valid for the current class. (Column 27, lines 44-49; emphasis added.)

<u>Independent Claim 31</u>

Appellant contends that the "equation of software classes with hardware resources is erroneous" (brief, page 12). However, as noted above, the actual position of the examiner is that the VISA classes described in Sojoodi are <u>representations</u> of hardware resources, not that the VISA classes *are* the hardware resources.

Appellant further contends that Shulman and Sojoodi do not teach "automatically configuring the <u>first node</u> with the first parameter value in response to the user input selecting the first parameter value, wherein automatically configuring the first node with the first parameter

value comprises automatically updating the displayed block diagram to visually indicate that the first node receives the first parameter value as input" (brief, page 13).

Specifically, referring to Shulman, Appellant states that "modifying a function call written in a text-based programming language is not the same as automatically configuring a node in a block diagram of a graphical program with a parameter value" (brief, page 13).

Nonetheless, Appellant is respectfully reminded that the test for obviousness is not that the claimed invention must be expressly suggested in any one or all of the references. Rather, as noted above, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Appellant acknowledges that Shulman teaches modifying a function call in the source code of a program to include a parameter value. In other words, Shulman teaches automatically configuring the function call with the selected parameter value. As Shulman illustrates, the configuring comprises automatically updating the displayed source code to visually indicate that the function receives the parameter value as input (see, e.g., FIG. 9 as compared to FIG. 8, and column 12, lines 17-30 and 33-40).

Appellant presents a general allegation that Sojoodi "does not remedy this deficiency" of Shulman (brief, page 13). However, Sojoodi clearly illustrates that in the context of a graphical program, functions such as the VISA functions noted above are displayed as nodes in a block diagram visually indicating that the nodes receive parameter values as input (see, e.g., FIG. 6 and column 5, lines 11-42).

Thus, given that Shulman teaches automatically updating the displayed source code to visually indicate that the function receives the parameter value as input, and given that Sojoodi

teaches that a function is displayed as a node in a block diagram, the combined teachings of Shulman and Sojoodi would have suggested "automatically updating the displayed block diagram to visually indicate that the first node receives the first parameter value as input" to those of ordinary skill in the art.

Claim 32

Appellant contends that Sojoodi does not teach "automatically wiring the first parameter value to an input terminal of the first node" such as recited in the claim (brief, page 14).

However, the examiner points out that Shulman teaches automatically configuring the function call with the selected parameter value (see, e.g., FIG. 9 as compared to FIG. 8, and column 12, lines 17-30 and 33-40), and as reasoned above, the combined teachings of Shulman and Sojoodi would have suggested that the configuring comprises "automatically updating the displayed block diagram to visually indicate that the first node receives the first parameter value as input" to those of ordinary skill in the art.

Here, as Sojoodi illustrates, the "visual indication" is that the node receives the parameter value at an input terminal (see, e.g., FIG. 6). Sojoodi clearly states, "A portion of the input parameters are received by the input terminals of the VISA nodes" (column 5, lines 36-37). Indeed, as Appellant acknowledges, these input parameters are "wired" to the input terminals of the nodes. Sojoodi describes:

> Referring again to FIG. 8, the programmer selects a wiring tool from a tool menu, as shown in FIG. 9e, and wires together input terminals to output terminals of the nodes. In response, the block diagram editor 64 displays wires connecting the terminals, as shown in FIG. 9f, between the VISA session control terminal and the VISA session (for class) input terminal of the VISA open function node, in step 86. (Column 18, lines 18-25; emphasis added.)

Thus, the combined teachings of Shulman and Sojoodi would have suggested that the configuring further comprises "automatically wiring the first parameter value to an input terminal of the first node" to those of ordinary skill in the art.

Moreover, in Sojoodi, even if "the user manually wires the nodes together using a wiring tool" (brief, page 14), the above quotation is evidence that the block diagram is automatically updated to display such wiring.

Claims 20 and 21

In the Office action, the examiner pointed out that FIG. 8 of Shulman teaches or suggests both embodiments of the "graphical user interface" recited in the claims, namely that the graphical user interface is displayed "in a separate window apart from the first window" (claim 20), or "in a second portion of the first window" (claim 21).

Appellant argues that the statements in the Office action are "inconsistent with each other" and that Shulman "cannot" teach both embodiments (brief, page 15). Specifically, Appellant contends that Shulman does not teach "wherein said displaying the graphical user interface comprises displaying the graphical user interface in a second portion of the first window" such as recited in claim 21 (brief, page 15).

First, the examiner reiterates that in Shulman, the source code is displayed in an edit display screen 700 (see, e.g., FIG. 7 and column 11, lines 38-40) and the claimed "graphical user interface" is displayed in a selection menu assist window 850 (see, e.g., FIG. 8 and column 12, lines 25-30). Second, the examiner agrees with Appellant that a reasonable interpretation of Shulman is that the selection menu assist window 850 is a separate window apart from the edit display screen 700 (brief, page 15), such as recited in claim 20.

Nonetheless, another reasonable interpretation of Shulman is that the selection menu assist window 850 is a <u>sub-element</u> or <u>sub-component</u> of the edit display screen 700, such that the source code is displayed in a "first portion" of the edit display screen 700 (i.e., at 732) and the selection menu assist window 850 is displayed in a "second portion" of the edit display screen 700 (see, e.g., FIG. 8), such as recited in claim 21.

Thus, the examiner submits that Shulman teaches or suggests the subject matter of both claim 20 and claim 21. The examiner respectfully reminds Appellant that the claims are given the broadest reasonable interpretation consistent with the specification. See MPEP § 2111.

<u>Claim 33</u>

Appellant contends that combining the teachings of Sojoodi and Molinari "would destroy a key principle of Sojoodi's invention" (brief, page 16).

However, the examiner does not agree with Appellant's analysis. The examiner respectfully submits that returning a list of classes and returning a list of channels are not mutually exclusive operations. Therefore, implementing the teachings of Sojoodi such that the object manager returns the "plurality of channels of the measurement device" does not mean, as Appellant proposes, that the object manager must necessarily do so "instead of" returning the list of VISA classes (brief, page 16).

Moreover, the channels of the measurement device are hardware resources. In Molinari, the channels are "DAQ data channels" (see, e.g., paragraph [0120]). Likewise, Sojoodi describes measurement devices in the form of DAQ instruments (see, e.g., column 4, lines 25-40). As noted above, the VISA classes described in Sojoodi are representations of hardware resources and encapsulate functions to control the measurement devices (see, e.g., column 12, lines 43-64),

including DAQ instruments. Therefore, a person of ordinary skill in the art could, with predictable results, implement the teachings of Sojoodi such that the VISA classes encapsulate the DAQ data channels of such instruments.

Thus, implementing the teachings of Sojoodi such that the object manager returns the "plurality of channels of the measurement device" as part of the VISA classes would not somehow prevent the object manager from "[fulfilling] its intended purpose as a central repository of class information" (brief, page 16).

Claim 34

Appellant contends that Molinari does not teach "wherein said invoking the software for the measurement device in order to determine the one or more hardware resources of the measurement device is performed in response to the user input requesting to select a parameter value" (brief, page 18).

However, the examiner does not agree with Appellant's reasoning. Appellant's interpretation is that the "selected data source [in Molinari] equates to the selected first parameter value recited in claim 1" (brief, page 17). However, the examiner notes that as described in Molinari, a selected channel of the data source more accurately equates to the selected "first parameter value" recited in the claim (see, e.g., paragraph [0152]).

Claim 1 recites that the "graphical user interface for selecting a parameter value for the first parameter of the first function call" is displayed "in response to user input requesting to select a parameter value." As cited in the Office action, Shulman teaches displaying the selection menu assist window 850 in response to the user pressing the comma 811 "commit" key (see, e.g., FIG. 8 and column 12, lines 17-30). The user pressing the comma key is user input

requesting to select a parameter value from the selection menu assist window 850. In other words, Shulman teaches that the selection menu assist window 850 is displayed "in response to user input requesting to select a parameter value" such as recited in the claim.

As reasoned above, Sojoodi suggests "invoking the software for the measurement device in order to determine the one or more hardware resources of the measurement device" in terms of querying the object manager for the list of classes of the instrument (see, e.g., column 7, lines 3-17). Here, Sojoodi does not specify that the querying is performed "in response to the user input requesting to select a parameter value" such as recited in claim 34.

Nonetheless, Molinari teaches "invoking the software for the measurement device in order to determine the one or more hardware resources of the measurement device" in terms of invoking a data source aspect 140 to provide information about one or more DAQ data channels of a data source (see, e.g., paragraph [0150]). The invoking is performed after a user selects a data source and therefore is performed "in response to" the user input requesting to select the data source (see, e.g., paragraph [0149]). Subsequently, after the data source is selected and the data source aspect 140 is invoked, the user selects a DAQ data channel from the one or more valid DAQ data channels of the data source (see, e.g., paragraph [0151). In other word, the selection of the data source denotes user input requesting to select a channel of the data source (see, e.g., FIG. 12). Thus, the invoking is performed further "in response to" the user input requesting to select the channel. As noted above, a selected channel in Molinari represents a selected "first parameter value" such as recited in claim 1.

Therefore, the combined teachings of Shulman, Sojoodi and Molinari would have suggested "wherein said invoking the software for the measurement device in order to determine

the one or more hardware resources of the measurement device is performed in response to the user input requesting to select a parameter value" to those of ordinary skill in the art.

Moreover, the examiner points out that in Sojoodi, querying the object manager for the list of classes of the instrument involves "parsing a class definition file containing the list of classes" (see, e.g., column 7, lines 3-17). Sojoodi clearly describes that the parsing is also performed in response to user input (see, e.g., column 26, lines 13-21).

Claim 12

Appellant refers to the arguments presented in support of claim 1 (brief, page 18). In response, the examiner submits that claim 1 and dependent claim 12 are unpatentable for the reasons set forth above.

In summary, the examiner respectfully submits that the record establishes a *prima facie* case of obviousness.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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